

The Claims:

1. A compact boss for use in a shutter assembly having a plurality of shutter blades, said boss including:
  - a) a short axial member whereby the boss is adapted to rotate about the axis of the axial member;
  - b) a complementary surface adapted to engage a translating member capable of translating the linear motion of the translating member into rotational movement of the boss;
  - c) a bearing surface adapted to rest in or on a support in the shutter assembly; and
  - d) blade engagement means to impart rotational motion to the blade corresponding to the rotational motion of the boss.
2. A boss according to claim 1, wherein the blade engagement means engages the boss with the blade at two or more locations off-centre relative to the axis of rotation of the axial pin.
3. A boss according to claim 1, wherein the blade engagement means includes at least one protrusion extending from either the boss or the shutter blade, such that the protrusion of the boss or the shutter blade is keyed to co-act with a correspondingly configured recess in the shutter blade or the boss, respectively.
4. A boss according to claim 1, wherein the engagement means includes a pair of protrusions lockably engageable to corresponding recesses in an end of the shutter blade.
5. A boss according to claim 1, wherein the complementary surface includes a combination of ridges and recesses adapted to cooperate with complementary features on the translating member.
6. A boss according to claim 5, wherein the complementary surface is in the form of a geared teeth.
7. A shutter assembly for use with a plurality of the bosses defined in claim 1, said shutter assembly including:
  - a pair of opposed, parallel, spaced elongate members, at least one said elongate member a plurality of the supports, each support adapted to support one of the plurality of bosses;
  - the translating member adapted to travel reciprocally along or within at least one of said elongate members; and
  - a plurality of the shutter blades, each said blade engaged with one of said bosses.
8. A shutter assembly according to claim 7, wherein the at least one elongate member is in the form of a housing adapted to house a plurality of the bosses.
9. A shutter assembly according to claim 8, wherein each boss includes seal means to prevent the ingress of dirt and grime into the housing.

10. A shutter assembly according to claim 9, wherein the seal means includes a bush coaxial to, and from which extends, the axial pin.
11. A shutter assembly according to claim 8, wherein the shutter assembly comprises a plurality of modular units, each modular unit adapted to mount one of the shutter blades and including:
- 5     an elongate member unit stackable and engageable to like elongate member units to form the elongate member in assembled form; and
- one of the supports for one of the bosses.
12. A shutter assembly according to claim 11, wherein the elongate member unit includes a pair of separately formed and joinable half components.
- 10     13. A shutter assembly according to claim 11, wherein the assembled elongate member units form a housing for the bosses and the translating member.
14. A shutter assembly according to claim 11, wherein the translating member is controlled by a motorised turning means having sensors responsive to environmental conditions.
- 15     15. A shutter assembly according to claim 7, wherein the shutter assembly includes one or more cassettes, each said cassette including:
- a pair of cassette elongate members which form the whole or at least part of the pair of elongate members;
- a cassette translating member which forms the whole or at least part of the translating member;
- 20     a plurality of cassette bosses which form the whole or at least part of the plurality of bosses; and
- a plurality of cassette blades which form the whole or at least part of the plurality of shutter blades.
- 25     16. A shutter assembly according to claim 15, wherein the pair of cassette elongate members are adapted to remain substantially co-planar relative to each other during installation of said cassette without the need for top or bottom reinforcing rail members parallel to the cassette blades.
17. A shutter assembly according to claim 15, wherein each cassette is in modular kit form
- 30     ready to be installed into a pre-existing wall opening.
18. A shutter assembly according to claim 17, wherein each cassette is engageable to like cassettes to cover a wall opening larger than an individual cassette.
19. A shutter assembly according to claim 1, wherein at least one of said plurality of shutter blades includes an elongate body having a constant cross section along its length, said body
- 35     including:

a main portion extending along a first edge of the body substantially the full length of the body, said main portion having a top external surface substantially convex in profile and an underside surface; and

5 a minor portion integrally formed with the main portion and extending along the other edge of the body substantially the full length of the body, said minor portion having a top external surface substantially concave in profile,

whereby the portion of the underside surface of the main portion to the first edge has a profile adapted to rest in snug relationship to a like shutter blade in the depression defined by the concave external surface of the like shutter blade.

- 10 20. A shutter assembly according to claim 19, wherein said at least one shutter blade has an aerofoil shape wherein its upper surface has contours with opposing radii and the underside surface of the main portion follows substantially the same contour as the top external surface of the main portion, the profile of the main portion slightly tapering towards the main longitudinal edge.
- 15 21. A shutter assembly according to claim 19, wherein said at least one shutter blade includes heating means.
22. A shutter assembly according to claim 21, wherein said heating means includes electrical heating elements.
23. A shutter assembly according to claim 21, wherein said heating means includes a network  
20 of cavities or conduits in the body through which heating or cooling fluid flows.